

Department of Biostatistics
Medical College of Georgia

Annual Report



July 1, 2004 – June 30, 2005

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Introduction

This document summarizes the activities of the Department of biostatistics in the School of Graduate Studies of the Medical College of Georgia (MCG) for the period of July 2004 – June 2005. The Department, as presently constituted, was formed in 2003, changing from the Office of Biostatistics to a full-fledged academic department within the School of Graduate Studies. Dr. James Dias served as the Interim Chair till March 2004. On April 1 Dr. Varghese George, former Director of Graduate Program in the Department of Biostatistics at the University of Alabama at Birmingham, came on board to MCG as the new Chair of the Department. As of June 30, the Department had five fulltime, two adjunct and one emeritus faculty members.

Mission

The overarching mission of the Biostatistics Department at MCG is to advance knowledge in the field of biostatistics, and in the biological, biomedical and behavioral sciences through biostatistical applications. The mission is achieved by:

1. Implementing a high caliber teaching program in biostatistics for graduate students and others;
2. Conducting original research to develop and evaluate biostatistical methodologies;
3. Conducting original biomedical research using statistical methodology; and
4. Collaborating with investigators on biomedical research that requires biostatistics support.

The long-term goal for the Department is to become a nationally and internationally recognized department with strengths and competency in graduate training, collaborative research and methodological research. Moving toward this goal, we are currently recruiting three more faculty members with strong record of methodological and collaborative research. A masters program in Biostatistics that has already been approved by the Board of Regents is slated to start in the Fall of 2006. We plan to start a doctoral program in Biostatistics by 2009.

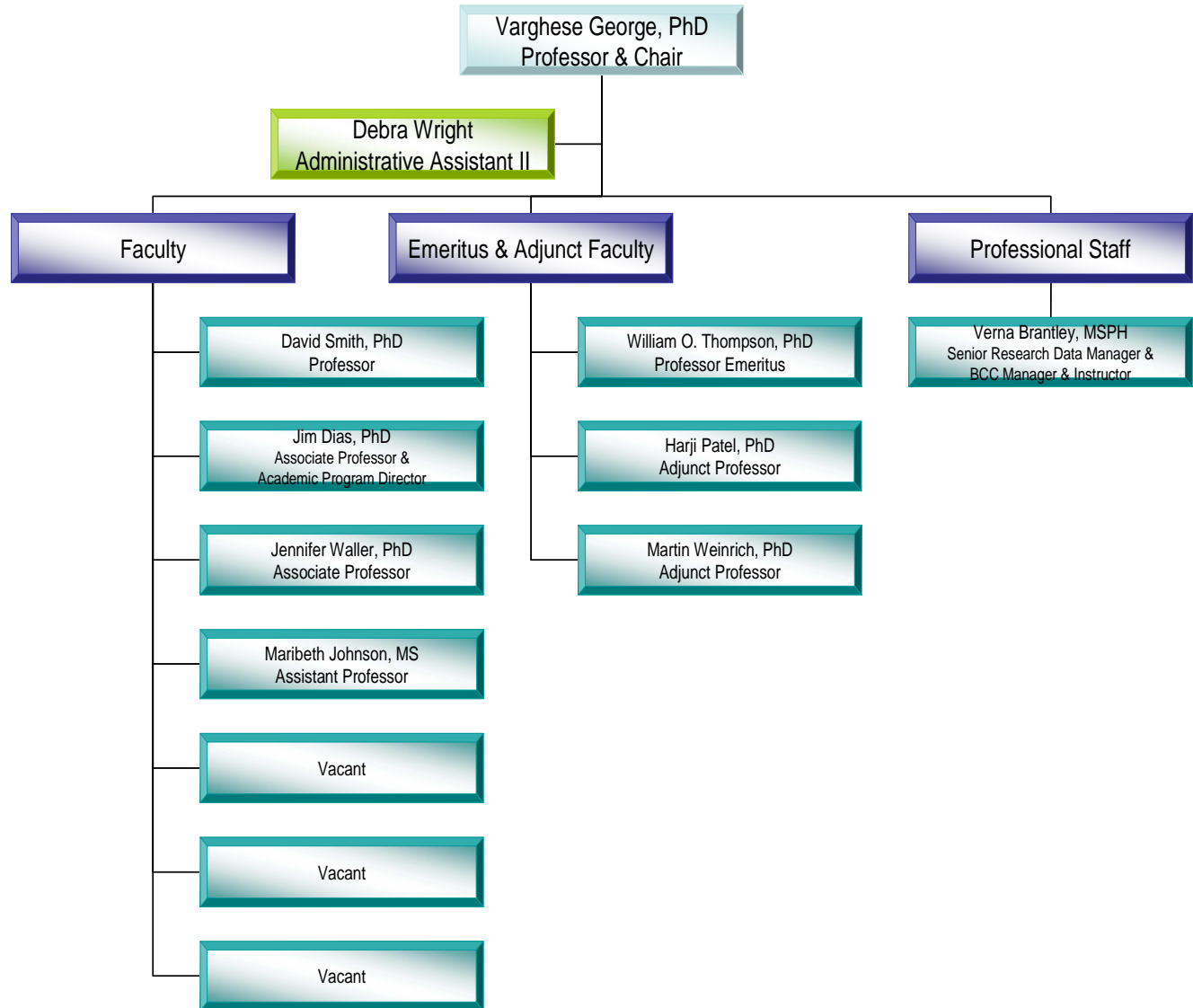
In the following pages we provide the details of our professional activities over the past year. We hope that this document will provide a good idea of the breadth of our Department and our contribution to the Medical College community.

Varghese George, Ph.D.



Professor & Chair

Organizational Chart as of June 30, 2005



Personnel Changes

- *Dr. Varghese George was appointed Professor and Chair for the Department of Biostatistics, effective April 2005.*
- *Dr. Robert Podolsky resigned his appointment to the Department of Biostatistics and transferred to the Center for Biotechnology and Genomic Medicine at MCG, effective November 2004.*
- *Debra Wright replaced Sara Curtice as Department Administrator.*

Research Achievements and Benchmarks

Research

The Department is actively involved in methodological and collaborative research, and has strong applied research thrust. The Biostatistics faculty members have extensive experience in providing statistical support for NIH, NSF and private foundation grants. Collaborative research is conducted by serving as co-investigators in grant proposals and funded projects. The collaboration has resulted in substantial extra-mural funding support for the Department and many peer-reviewed publications. With the recruitment of at least four more new faculty members in the immediate future, we expect to expand the methodological and collaborative research, and to increase the funding support substantially.

Biostatistics Consulting Center

The Department has an active consulting service. Ms. Verna Brantley serves as our Consulting Manager. We offer comprehensive statistical consulting for investigators within the Medical College, and from other academic institutions, government agencies and private industry. Specific services offered include assistance in grant proposal preparation, design of clinical trials, experimental design, survey design, and determination of sample size requirements, randomization, data management, statistical modeling, data analysis and interpretation. The Medical College of Georgia investigators receive a 50% discount.

Articles published or submitted for publication by Biostatistics Faculty

Adair SM, Rockman TE, Shafer TE, **Waller JL** (2004). Survey of behavior management teaching in pediatric dentistry advanced education programs. *Pediatric Dentistry* 26:151-158.

Adair SM, Shafer, TE, Rockman, RA, **Waller JL** (2004). Survey of behavior management teaching in predoctoral pediatric dentistry programs. *Pediatric Dentistry* 26:143-150.

Adair SM, **Waller JL**, Schafer TE, Rockman, RA (2004). A survey of members of the American Academy of Pediatric Dentistry on their use of behavior management techniques. *Pediatric Dentistry* 26:159-166.

Andrews J, Felton G, Wewers M, **Waller J**, Humbles P (2005). Sister to Sister: A Pilot to Assist African-American Women in Subsidized Housing to Quit Smoking. *Southern Online Journal of Nursing Research* 6:1-23.

Bakanay SM, Dainer E, Clair B, Daitch L, Wells L, Holley L, Kutlar A, **Smith DM** (2005). Mortality in sickle cell patients on hydroxyurea therapy. *Blood* 105:545-547.

Barbeau P, Robinson V, Kapuku G, Humphries MC, **Johnson MH**, Gutin B (2005). Left ventricular mass and function in black and white adolescents: relations to general and visceral adiposity, physical activity and fitness, insulin and blood pressure. *Am J Cardiology* (Submitted).

Barnes VA, Treiber F, **Johnson M** (2004). Impact of Transcendental Meditation on ambulatory blood pressure in African American adolescents. *Am J Hypertension* 17:366-9.

Barnes VA, **Johnson MH**, Treiber FA (2004). Temporal stability of twenty-four-hour ambulatory hemodynamic bioimpedance measures in African American adolescents. *Blood Pressure Monitoring* 9:173-7.

Bartley J, Soltan T, Winborne H, Kim S, Martin-Studdard A, Hess D, Hill W, **Waller J**, Carroll J (2005). BrdU-positive cells in the neonatal mouse hippocampus following hypoxic-ischemic brain injury. *BMC Neuroscience* 6:15.

Bergeron MF, Hall E, **Waller JL** (2005). Voluntary Fluid Intake and Core Temperature Responses in Adolescent Athletes. *Medicine and Science in Sports and Exercise* (Submitted).

Bundy V, Pollock J, **Johnson MH**, Litaker MS, Gutin B, Barbeau P (2005). Resistin is associated with inflammatory markers in healthy teenagers. *Obesity Research* (Submitted).

Chernecky C, Macklin D, Nugent K, **Waller JL** (2005). Potential value of Vitamin E in cancer patients with venous access devices. *Journal of Cancer Integrative Medicine* 3:38-40.

Chernecky C, Nugent K, **Waller J**, & Macklin D (2004). Differences of patients and caregivers in determining who should be involved in the selection of venous access devices. *Journal of the Association of Vascular Access* 9:36-38.

Chernecky C, Sarna L, **Waller JL**, Brecht ML (2004). Assessing Coughing and Wheezing in Lung Cancer: A Pilot Study. *Oncology Nursing Forum* 31:1095-1101.

Childs AJ, Friedman WH, Schwartz MP, **Johnson M**, Royek, AB (2005). Female patients' sex preferences in selection of gynecologists and surgeons. *Southern Medical Journal* 98:405-408.

Davis K, Dickman ED, Ferris D, **Dias JK** (2004). Human Papillomavirus Vaccine Acceptability Among Parents of 10- to 15-Year Old Adolescents. *J. Lower Genital Tract Disease* 8:188-194.

Faddy MJ, **Smith DM** (2005). Modelling the Dependence between the Number of Trials and the Success Probability in Binary Trials. *Biometrics* (In Press).

Fagan SC, Kozak A, Hill WD, Pollock DM, Xu L, **Johnson MH**, Ergul A, Hess DC (2005). Hypertension after cerebral ischemia: candesartan provides neurovascular protection. *J Hyperten* (Submitted).

Fick DM, Kolanowski AM, **Waller JL**, Inouye SK (2005). Delirium superimposed on dementia in a community-living managed care population: A three year retrospective study of occurrence, costs, and utilization. *Journal of Gerontology: Medical Sciences* 60:748-753.

Fick DM, Maclean JR, Rodriguez, NA, Short L, Vanden Heuvel R, **Waller, JL**, Rogers RL (2004). A Randomized Study to Decrease the Use of Potentially, Inappropriate Medications in Older Adults in a Southeastern HMO. *American Journal of Managed Care* (In Press).

Gutin B, Howe CA, **Johnson MH**, Humphries MC, Snieder H, Barbeau P (2005). Heart rate variability in adolescents: relations to physical activity, fitness and adiposity. *Med & Sci in Sports & Exercise* (In Press).

Hanevold C, **Waller J**, Daniels S, Portman R, Sorof J (2004). The effects of obesity, sex and ethnic group on left ventricular hypertrophy and geometry in hypertensive children: A collaborative study of the International Pediatric Hypertension Association. *Pediatrics* 113:328-333.

Harris AK, Ergul A, Kozak A, Machado LS, **Johnson MH**, Fagan SC (2005). Effect of neutrophil depletion on gelatinase expression, edema formation and hemorrhagic transformation after focal ischemic stroke. *BMC Neuroscience* (In Press).

Harris AK, Hutchinson JR, Sachindanandam K, Dorrance A, Stepp D, **Johnson MH**, Fagan SC, Ergul A (2005). Type 2 diabetes causes remodeling of cerebrovasculature via differential regulation of matrix metalloproteinases and collagen synthesis: role of endothelin-1. *Diabetes* (In Press).

Hashimoto M, Ito S, Tay FR, Sano H, Kaga M, **Waller JL**, Pashely DH (2005). Permeability of adhesive resin films. *Journal of Dental Research* (Submitted).

Hess DC, Wang W, Hamilton W, McVicker R, Lee S, Pardue C, **Waller JL**, Gross H, Nichols F, Hall C, Adams RJ (2005). REACH: Clinical feasibility of a rural telestroke network. *Stroke* (In Press).

Hilali HM, Simpkins AN, Hill WD, **Waller JL**, Knight RA, Fagan, SC (2004). Single Slice Method for Quantification of Hemorrhagic Transformation using Direct ELISA. *Neurological Research* 26:93-98.

Hoffman WH, Barbeau P, Litaker MS, **Johnson MH**, Howe CA, Gutin B (2005). Secondary sexual characteristics and body composition, blood pressure and insulin in black girls. *Obesity Research* (Submitted).

Kasis AG, Pacheco RJ, Hekal W, Farhan MJ, **Smith DM**, Ali AM (2004). The precision and accuracy of templating the size of unicondylar knee arthroplasty. *Knee* 11:395-398.

Kolanowski AK, Fick DM, **Waller JL**, Shea D (2005). Spouses of Persons with Dementia: Their Healthcare Problems, Utilization and Costs. *Nursing Research* (In press).

Lane JE **Waller JL**, Davis LS (2005). Relationship between age of ear piercing and keloid formation. *Pediatrics* 115:1312-1314.

Maclean JR, Eubanks A, **Waller JL** (2005). Patterns of care for the homeless at a medical clinic run by an academic medical center. *Journal of the Medical Association of Georgia* (Submitted).

Marks DS, Gudapati S, Prisant LM, Weir B, diDonato-Gonzalez C, **Waller JL**, Houghton JL (2004). Mortality in patients with microvascular disease. *Journal of Clinical Hypertension* 6:304-309.

Mazzella FM, **Smith DM** Horn P, Cotelingam JD, Rector JT, Shrit AM, Pesce A, Schumacher HR (2005). Prognostic Significance of Pronormoblasts in Myelodysplastic Patients. *American Journal of Hematology* (Submitted)

Mikuls TR, Saag KG, **George V**, Mudano AS, Banerjee S (2005). Racial disparities in the receipt of osteoporosis related healthcare among community-dwelling older women with arthritis and previous fracture. *Journal of Rheumatology* 32:870-875.

Mruthinti S, Buccafusco JJ, Hill WD, **Waller JL**, Jackson TW, Zamrini EY, Schade RF (2004). Autoimmunity in Alzheimer's Disease: Increased Levels of Circulating IgGs Binding A and RAGE Peptides. *Neurobiology of Aging* 25:1023-1032.

Pashley DP, **Waller JL** (2004). In vitro evaporative vs convective water flux across human dentin, before and after conditioning and placement of glass-ionomer cements. *American Journal of Dentistry* 17:211-215.

Peterson A Fick D, **Waller JL**, Robinson RC, Maclean R (2005). Decision-making and advance directives in hospitalized older adults with cognitive impairment. *American Journal of Alzheimer's Disease and Other Dementias* (Submitted).

Portik-Dobos V, Harris AK, Song W, Hutchison J, **Johnson M**, Imig J, Pollock DM, Ergul A (2005). Endothelin antagonism prevents EGFR transactivation but not early activation of renal matrix metalloproteinase activity in Type 2 diabetes. *American J Pharmacology* (Submitted).

Prisant LM, Mehta P, Arora V, Gentry M, **Waller JL** (2005). Relationship between hemoglobin A1c and arterial elasticity. *Diabetes* (Submitted).

Rogers LQ, Gutin B, Humphries MC, Lemmon CR, **Waller JL**, Baranowski T, Saunders R (2005). A physician fitness program: enhancing the physician as an "exercise" role model for patients. *Teaching and Learning in Medicine* 17:27-25.

Sharma GK, Gudapati S, **Waller JL**, Prisant LM (2005). Assessing test repeatability of arterial stress index. *Blood Pressure Monitoring* (Submitted).

Sharma GK, Gupta S, **Waller JL**, Prisant LM (2005). Assessment of test repeatability of arterial stiffness index. *Blood Pressure Monitoring* (Submitted).

Sidhu S, Agee KA, **Waller JL**, Pashley, DH (2004). Early dimensional changes in glass-ionomer restorative materials. *American Journal of Dentistry* 17:211-215.

Smith DM, Ridout MS (2004). Local and Bayesian optimal designs for binary dose-response models with control mortality. *Journal of Statistical Planning & Inference* 133:463-478.

Smith TM, Tingen MS, **Waller JL** (2005). The influence of self-concept and locus of control on rural preadolescent tobacco use. *Southern Online Journal of Nursing Research* 6:1-19.

Steinbuchel P, Maclean R, Carroll J, Robinson RC, Venden Heuvel R, **Waller JL** (2004). The diagnosis and treatment of attention deficit/hyperactivity disorder (ADHD) in children and young adults in the state of Georgia. *The Georgia Pediatrician* 13:10-12.

Szalai AJ, Wu J, Lange EM, McCrory MA, Langefeld CD, Williams A, Zakharkin SO, **George V**, Allison DB, Cooper GS, Xie F, Fan Z, Edberg JC and Kimberly RP (2005). Single-nucleotide polymorphisms in the C-reactive protein (CRP) gene promoter that affect transcription factor binding, alter transcriptional activity, and associate with differences in baseline serum CRP level. *Journal of Molecular Medicine* 83:440-447.

Terry AV, Gearhar DA, Mahadik SP, Warsi SM, Davis LW, **Waller JL** (2005). Chronic exposure to typical or atypical antipsychotics in rodents: Temporal effects of clinical a7 nicotinic acetylcholine receptors. *Neuroscience* (Submitted).

Tingen MS, Andrews JO, **Waller JL**, Daniel SD (2004). A multi-component intervention targeting utilization of the Treating Tobacco Use and Dependence Guideline in the primary care setting. *Southern Online Journal of Nursing Research* 5(5).

Tiwari HK, Beasley, TM, **George V**, Allison DB (2005). Multifactorial Inheritance and Complex Diseases. In "Genetic Analysis of Complex Traits in Principles and Practice of Medical Genetics" 5th Ed, Emery and Ramin (Eds.) Elsevier Inc, *Philadelphia* (In press).

Tiwari HK, Holt J, **George V**, Beasley TM, Amos CI, Allison DB (2005). New joint covariance and marginal based tests for association and linkage for quantitative traits for random and non-random sampling. *Genetic Epidemiology* 28:48-57.

Varisco B, McAlvin B, **Dias JK**, Franga D (2004). Adenocarcinoid of the Appendix: Is Right Hemicolectomy Necessary? A Meta Analysis of Retrospective Chart Reviews. *J. American Surgeon* 70:593-599.

Wang S, Gross H, Lee SB, Pardue C, **Waller JL**, Nichols II FT, Adams RJ, Hess DC (2004). Remote evaluation of acute ischemic stroke in rural community hospitals in Georgia. *Stroke* 35:1763-1768.

Whitford GM, Blzalaf MA, Bijella MF, **Waller JL** (2005). Plaque flouride concentrations in a community without water fluoridation: Effects of calcium and use of a fluoride or placebo dentifrice. *Caries Research* 39(2):100-107.

Xu L, Fagan SC, **Waller JL**, Edwards DJ, Borlongan CV Zheng J, Hill WD, Feuerstein G, Hess DC (2004). Low dose intravenous minocycline is neuroprotective after middle cerebral artery occlusion-reperfusion in rats. *BioMed Central Neurology* 4:7.

Yelbuz TM, Leatherbury L, Wessel A, Wolfe RR, **Johnson M**, Kirby ML (2005). Quantitative analysis of ventricular pump function and midwall dynamics in the early embryonic heart after cardiac neural crest ablation. *Zeitschrift fur Kardiologie* (Submitted).

Yin Z, Moore JB, **Johnson MH**, Barbeau P, Cavnar M, Thornburg J, Gutin B (2005). The Medical College of Georgia FitKid Project: the relations between program attendance and changes in outcomes in year 1. *International Journal of Obesity* (In Press).

Yin Z, Gutin B, **Johnson MH**, Hanes Jr J, Moore JB, Cavnar M, Thornburg J, Moore D, Barbeau P (2005). An environmental approach to obesity prevention in children: MCG FitKid Project year 1 results. *Obesity Research* (Submitted).

Zhang K, Wiener H, Beasley TM, **George V**, Amos CI, Allison DB (2005). An Empirical Bayes Method for Analysis of Quantitative Trait Loci from Multiple Genome Scans. *Genetics* (Submitted).

Abstracts published by Biostatistics Faculty

Barbeau P, Bundy V, Humphries MC, **Johnson MH**, Litaker, MS, Gutin B (2004). Resistin is associated with inflammation in white but not black adolescents. *Obesity Research*, 12(suppl): A147. *NAASO Annual Scientific Meeting*, Las Vegas, NV.

Barbeau P, Lemmon CR, Stallmann-Jorgensen I, Hatfield Laube J, **Johnson MH**, Gutin B (2005). Relationship of eating attitudes with adiposity and food intake in young black girls. *Obesity Research*, in press. *NAASO Annual Scientific Meeting*, Vancouver, BC, Canada.

Bundy V, Barbeau P, **Johnson MH**, Humphries MC, Pollock JS, Gutin B (2005). Protective effect of adiponectin on the association of adiposity and insulin in adolescents. *Obesity Research*, in press. *NAASO Annual Scientific Meeting*, Vancouver, BC, Canada.

Ergul A, Jupin D, **Johnson MH**, Prisant ME (2005). Elevated ET-1 levels are associated with decreased arterial compliance in hypertensive patients. *59th AHA High Blood Pressure Council Meeting*, Washington, DC.

Fagan SC, Kozak A, Hill WD, Pollock DM, Xu L, **Johnson MH**, Ergul A, Hess DC (2005). Hypertension after experimental stroke: Candesartan provides neurovascular protection. *AHA, 59th Annual Fall Conferences and Scientific Sessions of the Council for High Blood Pressure Research*, Washington, DC.

Gutin B, **Johnson MH**, Gower B, Humphries MC, Hoffman W, Barbeau P (2005). Fasting insulin concentrations in adolescents: relations to general & visceral adiposity, cardiovascular fitness & free-living physical activity. *Obesity Research*, in press. *NAASO Annual Scientific Meeting*, Vancouver, BC, Canada.

Gutin B, Robinson V, Kapuku G, Humphries MC, **Johnson M**, Barbeau P (2005). Relations of visceral and subcutaneous abdominal adipose tissue to left ventricular mass in adolescents. *International Journal of Obesity* (In press).

Gutin B, Yin Z, Hanes JC, Moore JB, **Johnson MH**, Barbeau P, Thornburg J, Cavnar M, Moore D (2004). The Medical College of Georgia FitKid Project: results of a physical activity intervention on body composition in 3rd graders. *Obesity Research* 12:A7. *NAASO Annual Scientific Meeting*, Las Vegas, NV.

Humphries MC, Barbeau P, Yin Z, **Johnson M**, Gutin B (2005). Submaximal cardiovascular fitness testing as an alternative to maximal oxygen consumption testing in teenagers. *Medicine and Science in Sports and Exercise* 37: S18-S19.

Lemmon CR, Barbeau P, Howe CA, Yin Z, **Johnson MH**, Gutin B (2004). Perceived benefits and self-efficacy for physical activity, diet attitudes, and emotional well-being are related to adiposity and cardiovascular fitness in black girls. *Obesity Research* 12:A77. *NAASO Annual Scientific Meeting*, Las Vegas, NV.

Patel R, Nalamolu V, **Dias J**, Kaminski R, Kersey T, Robinson V (2005). Reperfusion Pattern On the Stress Minus Delay Bullseye Map Can Improve Sensitivity Of Myocardial Perfusion Scans. *Canadian Journal of Cardiology* (In press).

Prasad S, Kapoor D, Williams H, **Dias J**, Thornton J, Mandawat M, Robinson V (2005). Left Ventricular End Diastolic Pressure Cannot Be Used as a Surrogate of the Pulmonary Artery Wedge Pressure in the Catheterization Laboratory. *Canadian Journal of Cardiology* (In press).

Prasad S, Khanal S, Dudar B, Pineda G, **Dias J**, Thornton J, Kapoor D, Mandawat M, Robinson V (2004). Left Ventricular End Diastolic Pressure Cannot Be Used as a Surrogate of the Pulmonary Artery Wedge Pressure in the Catheterization Laboratory. *Proceedings of the American Heart Association Scientific Sessions*. New Orleans, LA.

Wang L, Yin Z, Gutin B, Hanes JC, Cavnar MM, Moore JB, **Johnson MH**, Barbeau P, Thornburg JS, Moore D (2004). A cost-effectiveness analysis of a school-based obesity prevention program. *Obesity Research* 12:A18. *NAASO Annual Scientific Meeting*, Las Vegas, NV.

Yin Z, Gutin B, Hanes JC, Moore JB, **Johnson MH**, Barbeau P, Thornburg J, Cavnar M, Moore D (2004). The Medical College of Georgia (MCG) FitKid Project: results of a physical activity intervention during the 3rd grade on cardiovascular risk factors. *Obesity Research* 12:A7. *NAASO Annual Scientific Meeting*, Las Vegas, NV.

Presentations by Biostatistics Faculty

Becker TD, Agee K, Pashley D, Rueggeberg F, Joyce A, **Waller JL**. Shrinkage of Monomer/Ethanol-Saturated Dentin Matrix Following Solvent Evaporation. *83rd General Session and Exhibition of the International, American and Canadian Associations for Dental Research*, Baltimore, MD March, 2005

Brackett M, Drisko CL, Thompson AL, Marshall DL, **Waller JL**. HydraBrush Oral Health System Efficacy in Irrigating Periodontal Pockets. *83rd General Session and Exhibition of the*

International, American and Canadian Associations for Dental Research, Baltimore, MD March, 2005

Carter KL, McDonald K, **Waller JL**. Safety of participating in State Games of Special Olympics Georgia. *Southern Society of the American Federation for Medical Research Regional Meeting*, New Orleans, February 2004.

Dias J. Two studies and a vision (Seminar). Medical College of Georgia, November 2004.

Smith DM. The Analysis of Count and Binary Data using Poisson Process Models. (Seminar) *GlaxoSmithKline*, Philadelphia, PA, December 2004.

Waller JL, Brantley VC, Podolsky RH. Where's the Match? *The Conference of the South East SAS User's Group*, Nashville, TN, October 2004.

White CB, **Waller JL**. The 2005 COMSEP Survey: Preliminary Results. *COMSEP Annual Meeting*, Greensboro, NC, April 2005.

Professional Meetings attended by Biostatistics Faculty

Brantley: Spring Forum of the Society for Clinical Data Management (SCDM), March 2005

Johnson: Joint Statistical Meetings, Toronto, Ontario, Canada, August 2004
SouthEast SAS® Users Group, Nashville, TN, October 2004
SAS Users Group International, Philadelphia, PA, April 2005

Smith: The ENAR (International Biometric Society), Austin, TX, March 2005

Waller: Joint Statistical Meetings, Toronto, Ontario, Canada, August 2004
SouthEast SAS® Users Group, Nashville, TN, October 2004

Other Professional Activities

Brantley: Tegrity training (Remote Classroom Delivery software), July 2004
WebCT training series, July-August 2004

Dias: Cardiology Journal Club, MCG. Guest lecturer and invited reviewer of statistical methods at monthly meetings.

George: Participated in a one-day planning meeting in Birmingham, AL on April 19th, to develop a proposal for a Program Project in statistical genetics methodology, in collaboration with investigators from University of Alabama at Birmingham, University of Florida, University of Missouri and UT MD Anderson Cancer Center.

Johnson: Pulmonary Journal Club Meetings

Smith: Surgery Journal Club Meetings

Funded Grants with Biostatistics Faculty as Co-Investigators

| <i>Biostat Faculty</i> | <i>PI/ Department</i> | <i>Title</i> | <i>Agency</i> | <i>Total Direct Cost</i> | <i>Funding Period</i> |
|------------------------|---|--|----------------------------|--------------------------|-----------------------|
| Dias | J Imig Vascular Biology | Oxygenase Metabolites and Renal Microvascular Reactivity | NIH/NHLBI | | 2002-2007 |
| Dias | D Ferris Family Medicine | Therapeutic compliance in treating women with bacterial vaginosis documented by PDA technology | 3M Pharmaceutical | | 2003-2004 |
| Johnson | P Barbeau GPI/Pediatrics | APEX: Adiposity Prevention by Exercise in Black Girls | NIH/NIDDK | \$2,269,434 | 2000–2005 |
| Johnson | B Gutin GPI/Pediatrics | LACHY: Lifestyle, Adiposity and Cardiovascular Health in Youths | NIH/NHLBI | \$1,774,737 | 2000-2004 |
| Johnson | P Barbeau GPI/Pediatrics | Medical College of Georgia FitKid Project | NIH/NIDDK | \$2,395,985 | 2002-2007 |
| Johnson | F Treiber GPI/Pediatrics | Stress Related Mechanisms of Hypertension Risk: Project 3 (Exercise: Impact on Reactivity and BP Risk Factors) | NIH/NHLBI | \$7,027,802 | 2002-2007 |
| Johnson | S Fagan Clinical Pharmacy (UGA) | Vascular Protection in Acute Ischemic Stroke | NIH/NINDS | \$525,000 | 2003–2006 |
| Johnson | D Marcus Ophthalmology | Xanthophyll-mediated Retinal Drug Delivery | NIH/NEI | \$300,000 | 2003-2006 |
| Waller | J Andrews Nursing | A Social Support Intervention for Low-Income African American Women Who Smoke | American Legacy Foundation | \$100,000 | 2005-2006 |
| Waller | AV Terry Clinical Pharmacy (UGA) | Antipsychotics: Temporal Effects on Cognitive Function | NIH | \$1,111,980 | 2003 -2006 |
| Waller | DH Pashley Dentistry | Determinants of the Durability of Resin-Dentin Bonds | NIH | \$1,429,200 | 2003- 2007 |
| Waller | DH Pashley Dentistry | Reasons for Poor Durability of Resin-Dentin Bonds | NIH | \$1,850,549 | 2004– 2009 |

| <i>Biostat Faculty</i> | <i>PI/ Department</i> | <i>Title</i> | <i>Agency</i> | <i>Total Direct Cost</i> | <i>Funding Period</i> |
|------------------------|-----------------------------|---|-------------------------------|--------------------------|-----------------------|
| Waller | R Martindale Surgery | Utilization and outcomes in bariatric surgery in a managed care organization | MCG Foundation | | 2004 –2005 |
| Smith | B Gutin GPI/Pediatrics | LACHY: Lifestyle, Adiposity and Cardiovascular Health in Youths II | NIH/NHLBI | \$1,774,737 | 2000-2004 |
| Smith/ Brantley | A Muir Pediatrics | Computer-assisted training (CAT) in self management education of children with newly diagnosed type 1 diabetes and their families | American Diabetes Association | \$260,870 | 2003-2006 |
| Smith | F Treiber GPI/Pediatrics | Stress Related Mechanisms of Hypertension Risk: Project 3 (Exercise: Impact on Reactivity and BP Risk Factors) | NIH/NHLBI | \$7,027,802 | 2002-2007 |
| Smith | C Webb Physiology | Cytokines and angiotensin II-induced hypertension | NIH | | |

Grants under Review with Biostatistics Faculty as Co-Investigators

| <i>Biostat Faculty</i> | <i>PI/ Department</i> | <i>Title</i> | <i>Total direct costs:</i> | <i>Agency</i> |
|------------------------|-------------------------------------|---|----------------------------|----------------------------|
| Dias | V Robinson | Provocative D-dimer Testing in Patients with Suspected Venous Thromboembolism: Improving Sensitivity and Specificity. | | American Heart Association |
| Johnson | S Fagan Clinical Pharmacy (UGA) | Neurovascular Consequences of Hypertension after Stroke | \$1,000,000 | NIH 2006-2010 |
| Johnson | A Ergul Clinical Pharmacy (UGA) | Vascular Protection & Endothelin B Receptors in Diabetes | \$900,000 | NIH 2005-2009 |
| Johnson | A Ergul Clinical Pharmacy (UGA) | Cerebrovascular Protective Role of Endothelin B Receptors | \$154,000 | AHA 2005-2007 |
| Johnson | A Ergul Clinical Pharmacy (UGA) | Targets for neurovascular protection after ischemic stroke: Influence of disease | \$1,000,000 | NIH 2006-2009 |
| Waller | M Stachura Center for Telehealth | A Model for Enhanced Community Based Colorectal Cancer Awareness and Screening. | \$275,000 | NIH 2006-2007 |
| Waller | S Fagan Clinical Pharmacy (UGA) | Minocycline to Improve Neurologic Outcomes | \$1,248,639 | NIH 2005-2008 |
| Waller | DM Fick Nursing (Penn State) | Delirium in Persons with Dementia. | | NIH 2005-2007 |

Grants applied for but not funded with Biostatistics Faculty as Co-Investigators

| <i>Biostatistics Faculty</i> | <i>PI/Department</i> | <i>Title</i> | <i>Agency</i> |
|--|---------------------------------------|--|-----------------------------------|
| Johnson | M Chisholm Clinical Pharmacy (UGA) | Immunosuppresant Co-payment Influence on Adherence | NIH |
| Johnson | P Barbeau GPI/Pediatrics | Take Charge! Multidisciplinary Treatment of Teen Obesity | NIH |
| Johnson | P Barbeau GPI/Pediatrics | Active Around Augusta | NIH |
| Waller, Podolsky, Johnson, Brantley | DC Hess Neurology | Medical College of Georgia Specialized Program in Acute Stroke. | NINDS |
| Waller | C Chernecky Nursing | Risk Factor Screening Tool for Lung Cancer: A Pilot Study. | Oncology Nursing Foundation |
| Waller | N Troy Nursing | Self-Care Symptom Management: Postpartum Fatigue. | NIH |
| Waller | P Barbeau GPI/Pediatrics | Take Charge! Multidisciplinary Treatment of Teen Obesity. | NIH |
| Waller | OP Mathew Pediatrics | Apnea bradycardia and desaturation in pre-term infants. | NIH |

Biostatistics Consulting Center Projects

| <i>Biostatistics Faculty</i> | <i>PI/Department</i> | <i>Title</i> |
|------------------------------|---|--|
| Brantley | G Adrales Surgery | Prospective, Randomized Trial Comparing Components Separation and Laparoscopic Ventral Hernia Repair (Electronic Data Capture) |
| Brantley | D Munn Pediatric Hematology/ Oncology | IDO Assay study (Electronic Data Capture) |
| Brantley | D Hess Neurology | DSC Stroke Performance Measure for JCAHO. MS Access Application Development |
| Brantley | D Hess Neurology | SPOTRIAS chart reviews MS Access Application Development. |
| Brantley | R Joseph Allied Health | Vitality and Productivity survey MS Access Application Development |
| Brantley | S Wragg School of Medicine | SAS programming assistance to ITSS for the School of Medicine to update test scoring programs |
| Brantley | S Wragg School of Medicine | developed new Item Analysis component for School of Medicine test scoring program (SAS programming) |
| Dias | LB Mellick Emergency Medicine | Migraine Headache and Pain Studies. Dept. |
| Dias | LB Mellick Emergency Medicine | Pediatric Intubation Blade-Length Studies |
| Dias | V Robinson Cardiology | Cardiology Fellow's Research Studies |
| Dias | W Herman School of Dentistry | Gingival Overgrowth Study |
| Dias | B Chaudhary Sleep Institute of Augusta. | CPAP Sleep Study |
| Dias | L Mulloy/ J White, School of Medicine | Kidney Rejection Study. |
| Dias | C Landolfo/ B Wells Cardiology | MI & BMI Risk Factors Study |
| Dias | C Landolfo Cardiology | Osteoporosis and CHD risk factors |
| Dias | L Mellick Emergency Medicine | Pain Study Inter-rater Agreement. |
| Dias | A Khocht Periodontics | Intra-class Correlations Study |
| George Brantley | B Asiyanbola Hosp. St. Raphael, CT | Analysis of BMI of Trauma Patients |

| <i>Biostatistics Faculty</i> | <i>PI/Department</i> | <i>Title</i> |
|------------------------------|---|---|
| Johnson | S Fagan Clinical Pharmacy | Hypertension after experimental ischemia: candesartan provides neurovascular protection |
| Johnson | S Fagan Clinical Pharmacy | Effect of neutrophil depletion on gelatinase expression, edema formation and hemorrhagic transformation after focal ischemic stroke |
| Johnson | A Kutlar Sickle Cell Center | Internal MCG research proposal: wATER Trial- use vs. no use of IV fluids in sickle cell patients undergoing pain crisis |
| Johnson | A Kutlar Sickle Cell Center | NIH RFA: sickle cell research center proposals. |
| Johnson | L Mulloy/D Patel Nephrology | BMI changes over time in kidney transplant patients, effect of immunosuppressant drugs |
| Johnson | M Chisholm Clinical Pharmacy | Age affects on the number or types of medications taken by post-renal transplant patients |
| Johnson | A Ergul Clinical Pharmacy | Endothelin antagonism prevents EGFR transactivation but not early activation of renal matrix metalloproteinase activity in Type 2 diabetes |
| Johnson | A Ergul Clinical Pharmacy | Elevated ET-1 levels are associated with decreased arterial compliance in hypertensive patients |
| Johnson | A Ergul Clinical Pharmacy | Type 2 diabetes causes remodeling of cerebrovasculature via differential regulation of matrix metalloproteinases and collagen synthesis: role of endothelin-1 |
| Johnson | G Moseley Family Medicine | Study design – retrospective chart review |
| Johnson | B Browning Dentistry | Experimental design and analysis considerations for repeated measures dental studies |
| Johnson | D Hill Medical student | Randomization scheme for medical student lottery |
| Johnson | M Witcher Neuroscience graduate student | Comparison of brain slide preparation techniques |
| Johnson | G Nichols-English Georgia Prevention Institute | PIE: comparison of mothers and daughters body composition and CVD risk factors |
| Johnson | B Stager OBGYN | Wound infection and warming blankets |
| Johnson | J Morgan Neurology | Identifying the most problematic symptoms at each stage of Parkinson disease: early, mid and late. |
| Johnson | J Wilde Emergency medicine | Pilot data for eventual grant submission, Tamiflu vs. Percocet for treatment of flu |

| <i>Biostatistics Faculty</i> | <i>PI/Department</i> | <i>Title</i> |
|------------------------------|---|---|
| Johnson | A Kallab Hematology Oncology | Association between tumor markers and tumor response to chemotherapy |
| Johnson | C Walker/ J Wilde Emergency medicine | Survey data comparing hospital admissions for PED and General ER |
| Johnson | V Bundy Vascular biology graduate student | Protective Effect of Adiponectin on the Association of Adiposity and Insulin in Adolescents |
| Johnson | M Lott Ophthalmology | Oral vs. topical moxifloxacin use |
| Smith | K Harris | Synaptic plasticity in a cellular mechanism of learning & memory. |
| Smith | P McDonough | Meta analysis of pregnancy rates & cycles. |
| Smith | F Mazzella | Prognostic significance of pronormoblasts in myelodysplastic patients. |
| Smith | F Rueggeberg | Comparisons of differences in cures. |
| Waller Brantley | R. Adams Neurology | Stroke Risk modeling |
| Waller Brantley | R. Adams Neurology | Change in TCD (repeated measures using a mixed linear model) |
| Waller | P Gokhale Ophthalmology | Effects of Xal-Ease® on Patient Compliance with Xalatan |

Educational Activities

Masters Program in Biostatistics

The field of biostatistics is in an exciting phase. The demand for biostatisticians in biomedical research far outstrips the supply. Fewer training programs and fewer qualified applicants are available for statistics and biostatistics programs than ten years ago. In order to meet the growing demand for professional biostatisticians, a Masters program in Biostatistics was approved by the Board of Regents of MCG and is slated to start in the Fall of 2006. Our faculty members have been spending considerable effort during last year in the planning and development of appropriate courses.

Other Graduate and Undergraduate Teaching

The Department is actively involved in graduate and undergraduate education at MCG. We offer a two-semester sequence, Biostatistics I & II (3 credit hours each), for students in various MS and PhD programs in Schools of Allied Health, Nursing and other disciplines. Biostatistics I was offered again in the Spring semester for the doctoral students in Nurse Practice. In the Summer of 2005 we offered a 3 credit hour course, Biomedical Statistics, primarily directed to the Biomedical Science doctoral students. We expect to continue to offer this course every Summer semester. We also offer during each Fall an undergraduate course, Statistics and Research Methodology (3 credit hours), for the students in Health Informatics. All of our Service courses are WebCT-based. In addition, we also run a WebCT course, Research Design & Statistics, primarily for the dental residents.

Courses Taught by Biostatistics Department

| <i>Level</i> | <i>Course</i> | <i>Instructor</i> | <i>Term</i> | <i>Number of Students</i> |
|----------------------|--|-------------------|-------------|---------------------------|
| Graduate | Biostatistics I- STA7010 | Dias | Fall 04 | 16 MS and PhD students |
| | Biostatistics I- STA7010 | Weinrich | Spring 05 | 7 PhD students |
| | Biostatistics II - STA7020 | Dias | Spring 05 | 3 PhD students |
| | Biomedical Statistics - STA7040 | Dias | Summer 05 | 36 PhD students |
| | Research Design and Statistics - STA7050 | Smith | Fall 04 | 16 Dental Residents |
| Undergraduate | Statistics & Research Methodology – HIM 4622 | Brantley | Fall 04 | 8 students (Seniors) |

College-wide Student Mentoring

Our faculty members are actively involved in the College-wide training programs for fellows, residents, graduate students and professional students. We serve in the Masters and Doctoral committees upon request by the students, mentor fellows, residents, graduate students and professional students by providing biostatistical and computing support on their research projects. We also participate in the journal clubs of various departments on campus, as circumstances necessitate. Though these activities typically do not result in publications or other rewards, we strongly believe that it is our responsibility to facilitate the advanced medical, nursing, allied health and basic science training programs offered by the Medical College.

| <i>Master and Dissertation Committees Served</i> | | | | |
|--|----------------|------------------|---------------------|----------------------|
| <i>Biostatistics</i> | | | | |
| <i>Level</i> | <i>Faculty</i> | <i>Candidate</i> | <i>Department</i> | <i>Date</i> |
| Masters | Dias | Juan Reyes | SAHS | 2004 to June 2005 |
| | Waller | Ana Thompson | School of Dentistry | Finished July 2004 |
| PhD | Johnson | Vanessa Bundy | Vascular Biology | Ongoing |
| | Waller | Barbara Kellum | School of Nursing | Finished April, 2005 |
| | Waller | Ellie Fennell | School of Nursing | Ongoing |

Service Activities

Service at the National Level

George: Member of the “Kidney, Nutrition, Obesity and Diabetes Epidemiology” (KNOD) Study Section of the National Institute of Health, which meets in Washington, DC three times a year to review grant applications

George: Faculty of NIDDK-Funded “Fifth Annual Short Course in Statistical Genetics”, Birmingham, AL, May 16-19

Johnson: Secretary and Executive Council Member of the SouthEast SAS Users Group

Johnson: Conference Registrar for the SouthEast SAS Users Group, 2004

Johnson: Co-chair of the Statistics and Data Analysis Section for the SAS Users Group International annual meeting, Philadelphia, PA, April 2005.

Waller: Co-Chair of the Statistics and Data Analysis Section for the SouthEast SAS Users Group meeting, Nashville, TN, September 2004.

College-wide Service

Dias: Curriculum Advisory Committee, School of Graduate Studies, August 2004 – Present

Smith: Search Committees for the Center for Biotechnology and Genomic Medicine

Waller: Department of Biostatistics representative to the Graduate Council
Search committee for the Chair of the Department of Biostatistics

Manuscript Reviews

Dias: Journal of the American Psychiatric Association

Johnson: Journal of Prosthetic Dentistry

Smith: Lancet

Waller: Journal of Prosthetic Dentistry
Pharmacotherapy Self-Assessment Program, 5th Ed., Am. College Clinical Pharmacy

Strategic Planning and Major Goals

Educational Environment

Course developments of the Masters Program in biostatistics, slated to start in the Fall of 2006, is already underway, and the faculty and staff will spend substantial amount of time and effort to complete them. As part of the recruitment efforts, during the Fall semester of this year our faculty members plan to visit relevant undergraduate departments at Colleges and Universities in Georgia and South Carolina.

The Department is in the process of establishing a 3/2 program with the Mathematics Department at the Augusta State University, in which students majoring in Mathematics or closely related fields at the Augusta State University will complete the undergraduate course requirements in three years and will continue at MCG for an additional two years to complete a Masters in Biostatistics. This program is approved in principle by the administrations of both institutions. We expect to complete all the necessary requirements and obtain official approvals from both institutions by the end this academic year.

The long term educational goal of the Department is be to build a strong MS/PhD program that will be highly competitive, methodologically sound, and which will meet the modern skills and demands of a practicing biostatistician. We anticipate starting a doctoral program by no later than 2010.

The Department is fully committed to supporting existing and new academic programs across MCG. All our service courses will be offered this year, as before. In addition, we have made the commitment to offer a course in Epidemiology in the Spring Semester for the new MPH program. Also, in addition to offering Biostatistics I in the Fall, we will offer it again in the Spring to meet the needs of the doctoral students in Nurse Practice in the School of Nursing.

The department is interested in developing a MSPH program (Master of Science in Public Health) in Biostatistics, primarily aimed at professional such as residents, fellows and junior faculty members. This will have long term benefit for the College by building research careers for young investigators and getting NIH funding through K, R03, R01 mechanisms.

Research Enterprise

The long term goal of the Department is to build a critical mass of faculty members with strong commitment in methodological and collaborative research. Active methodological research by faculty is not only important for the continued professional growth of the faculty, but is also an integral part of a good doctoral program.

As a biostatistician within a biomedical research institution, the most important role is to be a successful collaborative researcher. The biostatistics department should serve as the backbone of scientific research on campus, providing the leadership and support for all statistical needs. Biostatistics faculty should play a key role and serve as co-investigator in every grant application

from MCG, submitted to NIH, NSF and other national funding agencies. During the next year the Biostatistics faculty members plan to develop strong partnerships with other researchers on campus by meeting with them individually and in groups, attending and giving talks to journal clubs of various research groups, and helping them in their grant proposals. Discussions are already underway to submit an R01 application in collaboration with some of the investigators in the Georgia Prevention Institute and the Center for Biotechnology and Genomic Medicine. Through these various mechanisms, we expect to increase the extramural funding support within the Department to the level of a minimum of 50% funding for each faculty within the next 3 years, and use those funds to further expand the faculty.

The upcoming Cancer Center at MCG will open up excellent opportunities for the Biostatistics Department to expand and grow rapidly. We already have strong commitment from the MCG administration that Biostatistics will be a strong partner in the Cancer Center research, providing all the statistical support for the Cancer Center.

Faculty Recruitment

With our educational and research goals in mind, the Department is already started the recruitment of at least 3 more faculty members to complement the existing strengths of the Department. The newly recruited faculty members will have strong commitment for methodological and collaborative research. The School of Dentistry and the Department of Neurology have already expressed strong interests in supporting Biostatistics faculty members through joint appointment and salary support.

Diversity

The Department is committed to promote diversity of ethnic background, gender and other characteristics. Of the seven full-time personnel in the Department at present, we have 4 women, two African-Americans and one of Hispanic origin. We will make every effort to continue fair representation from all groups in our recruitment efforts for faculty, staff and students.

Institutional Communications

The Department will continue to support all existing and new academic programs across MCG, and will continue to mentor students, residents and fellows by assisting them in their projects for statistical and computational needs, serving in their thesis/dissertation committees, and offering short courses and seminars to meet their needs. We will make every effort to build research partnerships and promote strong interdisciplinary research programs by providing collaborative support to investigators across campus. We will continue to work closely with the IT Department of MCG to optimize our computing and IT needs.

Major Goals of FY06

Our long term goal is to build a full-fledged department with strengths and competency in graduate teaching, collaborative research and methodological research with national reputation. Working towards this goal, we plan to accomplish the following during the next year:

- Recruit at least 3 highly qualified faculty members who are committed to strong methodological and collaborative research, and teaching.
- Recruit at least 5 graduate students with strong quantitative background and exposure to biomedical science into our MS program slated to start in Fall 2006.
- Increase the extramural funding support at a reasonable pace with the goal of a minimum of 50% support for each faculty within three years.
- Increase the visibility of the Biostatistics Consulting Center across campus and increase the consulting activities. We will create a brochure for the Center and distribute among the departments and faculty members with in campus and among industries and government agencies across the State and the Nation.
- Continue the support service for students, residents and fellows, and other teaching programs by mentoring, presenting seminars, participating in journal clubs and offering service courses.
- Continue the professional growth of faculty by participating in national conferences and continuing education activities, presenting the research in meetings and seminars, and publishing methodological and collaborative research results in peer reviewed journals.

Conclusion

The Department is at its infancy, and it will take considerable efforts from the faculty and staff to build it into a full-fledged department with national and international stature. With the new leadership, the strong support from the administration and the firm commitments from our faculty and staff, we are very confident to achieve our goals in the not-too-far future. The various research initiatives across MCG such as the Georgia Prevention Institute, Center for Biotechnology and Genomic Medicine and the upcoming Comprehensive Cancer Center, open up the door for Biostatistics to expand and grow into a strong resource for research methodology and a major component of collaborative and interdisciplinary research on Campus. With the inception of the MS program next year, the planned Doctoral program within another few years, and continued teaching and mentoring of students in other programs, Biostatistics will also be an integral part of the graduate training programs at MCG. The state of the Department is quite healthy and the future looks very bright and promising.